

A. EMISSION LIMITATIONS

All facilities covered by this permit must meet the emission limitations in A.1. and A.2.:

1. Facility-Wide Annual Actual Emission Limits:

The annual actual emissions of particulate matter, volatile organic compounds, nitrogen oxides, sulfur dioxide, carbon monoxide, and federally regulated hazardous air pollutants listed in s. 112(b) of the Clean Air Act, emitted from the facility may not exceed 25% of any major source threshold set forth in s. NR 407.02(4), Wis. Adm. Code, on a calendar year basis. Annual actual emissions of lead from the facility may not exceed 0.5 tons per year on a calendar year basis. See the note and Table 1 below for the annual actual emission limits in tons per year calculated based on 25% of the major source thresholds. [s. 285.65(7) and (14), Wis. Stats., and s. NR 406.17(1) and (2)(b), Wis. Adm. Code]

Note: Major source thresholds vary according to the attainment status of the area in which the facility is located. Therefore, if there is a change in the attainment status of the area where the facility is located for any pollutant, then the annual actual facility-wide emission limits will also change to 25% of the new major source threshold for that pollutant. Table 1 is for informational purposes only. The ton per year numbers will change if there is a change in the definition of major source or if new nonattainment areas are created or if the attainment designations change. These thresholds were current as of May 1, 2006.

Table 1

Pollutant	Emission Limits¹
Particulate Matter Emissions	<ul style="list-style-type: none"> • 25 ton/year for particulate matter attainment areas • 17.5 ton/year for serious PM₁₀ nonattainment areas
Volatile Organic Compounds (VOCs)	<ul style="list-style-type: none"> • 25 ton/year for ozone attainment and basic, marginal or moderate ozone nonattainment areas • 12.5 ton/year for serious ozone nonattainment or areas within ozone transport regions except for any severe or extreme nonattainment area for ozone • 6.25 ton/year for severe ozone nonattainment areas
Nitrogen Oxides	<ul style="list-style-type: none"> • 25 ton/year for ozone attainment and basic, marginal or moderate ozone nonattainment areas • 12.5 ton/year for serious ozone nonattainment or areas within ozone transport regions except for any severe or extreme nonattainment area for ozone • 6.25 ton/year for severe ozone nonattainment areas • 2.5 ton/year for extreme ozone nonattainment areas
Sulfur Dioxide	<ul style="list-style-type: none"> • 25 ton/year
Carbon Monoxide	<ul style="list-style-type: none"> • 25 ton/year for attainment and moderate carbon monoxide nonattainment areas
Lead	<ul style="list-style-type: none"> • 0.5 tons/year
Section 112(b) Hazardous Air Pollutants (HAPs) ²	<ul style="list-style-type: none"> • 2.5 ton/year for any <i>single</i> pollutant • 6.25 ton/year for a <i>combination</i> of all pollutants

¹ You may contact your facility's assigned compliance engineer for help in determining the attainment status of your facility's location. A compliance staff list is available at <http://www.dnr.state.wi.us/org/aw/air/reg/countyresp.pdf>.

² See Attachment 1 of this permit for a list of section 112(b) HAPs.

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2. Other Applicable Requirements:

The owner or operator shall comply with all applicable air pollution control requirements in ch. 285, Wis. Stats., and chs. NR 400 to NR 499, Wis. Adm. Code, and all applicable federal air pollution control requirements in the Clean Air Act (42 USC 7401 to 7671q) and 40 CFR parts 50 to 97. [s. 285.65(3) and (13), Wis. Stats.]

Facilities that emit organic compounds *may* need to meet the following requirements.

3. Organic Compound Limitations for Process Lines:

For any process line that emits organic compounds, and which is not exempt under s. NR 424.03(1), Wis. Adm. Code, the owner or operator shall meet the requirements of s. NR 424.03(2) or (3), Wis. Adm. Code, by doing one of the following:

a. Apply 85% control as applicable in (1) or (2) below:

(1) For a process line constructed or last modified before August 1, 1979, control photochemically reactive organic compound emissions³ from the process line by at least 85%.

(2) For a process line constructed or last modified on or after August 1, 1979, control volatile organic compound emissions from the process line by at least 85%.

b. In lieu of a.(1) or a.(2) above, apply latest available control techniques and operating practices demonstrating best current technology (LACT) for the process line as described in A.4 through 8. of this permit. The LACT as described in this permit shall be followed at all times the process line is operating.

c. If a surface coating or printing process line meets the specific applicability⁴ requirements in any section from ss. NR 422.05 to 422.155, Wis. Adm. Code, but is not subject to that section based on an exemption in s. NR 422.03, Wis. Adm. Code, the owner or operator may elect to meet the emission limitations in ss. NR 422.05 to 422.155 for the process line instead of meeting a. or b., above after submitting a written request to the Department and receiving approval from the Department to do so. [ss. NR 406.17(1)(c) and NR 424.03(2) and (3), Wis. Adm. Code.]

The following requirements apply to each process line for which the owner or operator elected to apply LACT under condition A.3.b.

4. Emission Limitation for Process Lines electing LACT:

For process lines, other than hot mix asphalt plants, that are electing to meet LACT:

- a.** The owner or operator shall limit emissions of photochemically reactive organic compounds to less than 10 tons per calendar year for each process line on which construction or modification last commenced prior to August 1, 1979; and
- b.** The owner or operator shall limit emissions of volatile organic compounds to less than 10

³ Photochemically Reactive Organic Compounds are defined in s. NR 419.02(14), Wis. Adm. Code, as any of the following:
Group A: Hydrocarbons, alcohols, aldehydes, esters, ethers or ketones, which have olefinic or cyclo-olefinic type unsaturation.
Group B: Aromatic compounds with 8 or more carbon atoms to the molecule, except ethylbenzene. Group C: Ethylbenzene, toluene or ketones having branched hydrocarbon structures. Group D: A solvent or mixture of organic compounds in which any of the following conditions are met: 1. More than 20% of the total volume is composed of any combination of compounds listed in group A, B, or C above. 2. More than 5% of the total volume is composed of any combination of the compounds listed in group A above. 3. More than 8% of the total volume is composed of any combination of the compounds listed in group B above.

⁴ Geographic location or emission rates are not considered in determining if a process line meets the specific applicability requirements. The intention is to allow facilities that are in the same industrial group as those for which the section was written to use the conditions in that section.

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tons per calendar year for each process line on which construction or modification commenced on or after August 1, 1979.⁵ [ss. NR 406.17(1)(c), Wis. Adm. Code, and 285.65(7), Wis. Stats.]

5. Department Approved LACT:

In addition to complying with A.4., LACT for a coating process line has been determined to be use of high transfer application techniques including: electrostatic spray, dip coating or low pressure spray methods such as high volume low pressure (HVLP).
[ss. NR 406.17(1)(c) and NR 424.03(2)(c), Wis. Adm. Code.]

6. The owner or operator of a coating process line subject to 5. above shall keep on site, plans, technical drawings or manufacturer's specifications of the coating operation that are adequate to show the coating technique that is used. [ss. NR 406.17(1)(c) and NR 439.04(1)(d), Wis. Adm. Code.]

7. By March 1 of each year, the owner or operator shall calculate the amount of photochemically reactive organic compounds or volatile organic compounds, as appropriate, emitted by each process line subject to LACT, for the previous calendar year. Annual emissions may not exceed 10 tons per process line. [ss. NR 406.17(1)(c) and NR 439.04(1)(d), Wis. Adm. Code.]

8. Department Approved LACT for Hot-Mix Asphalt Plants:

- a.** Each year, within 30 days of the onset of hot mix production, and after that point, once within 20,000 tons of every additional 100,000 tons of hot mix production, a burner check shall be performed to determine the optimum levels⁶ of the following parameters:
 - (1)** Carbon monoxide (CO) and oxygen (O₂) levels in the drum, using a portable combustion analyzer, corresponding to burner operation in the most efficient manner, where the test port is located in the drum between the burner and the hot mix asphalt line, at the knock-out box, or in the duct-work after the drum;
 - (2)** Draft pressure levels at the front of the drum to assure the most efficient burner operation, measured by means of a pressure gauge (i.e., photohelic gauge) or other type of controller that controls a variable damper located in front of or behind the induced draft fan;
 - (3)** The following liquid fuel viscosity and gaseous fuel pressure and fuel feed conditions:
 - (a)** Liquid fuel temperature for each liquid fuel;
 - (b)** Pump pressure for each liquid fuel; and
 - (c)** Gaseous fuel pressure.
- b.** The hot mix asphalt plant shall undergo a minimum of one burner check annually unless a written waiver is obtained from the Department.
- c.** The owner or operator shall perform weekly inspections to ensure that the plant drum has tightly sealing drum end seals and duct work which keep air in-leakage to a minimum.
- d.** The owner or operator shall maintain records of the optimum levels of the parameters in Condition A.8.a., of this permit.

⁵ These limits are necessary to ensure that 85% control is technologically infeasible allowing the option to comply with LACT. These emission caps apply only to the process line and do not excuse the facility from having to meet the facility-wide VOC limits in condition A.1.

⁶ The levels determined in this condition must follow the requirements as described in s. NR 439.055(3), Wis. Adm. Code. In this context, the optimum levels and most efficient burner operation is intended to provide a combustion environment which reduces or minimizes the emissions of organic compounds (i.e. products of incomplete combustion). Carbon monoxide (CO) and oxygen (O₂) measurements provided a surrogate for the emissions of organic compounds. Reductions of the CO concentration without excessive oxygen dilution (minimum CO emissions) usually corresponds to efficient fuel utilization and a reduction in the emissions of organic compounds.

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- e.** The owner or operator shall maintain records of the burner checks and weekly inspections required under Conditions A.8.b. and A.8.c., of this permit. These records shall include the date of each action.

[ss. NR 406.17(1)(c) and NR 424.03(2)(c), Wis. Adm. Code.]

- 9.** Except as allowed in section F. of this permit, the owner or operator may not add or change emission units or operations so that the emission unit or facility would become subject to a standard or regulation under s. 111 of the Act (New Source Performance Standards) or s. 112 of the Act (MACT).[s. NR 406.17(3)(d), Wis. Adm. Code.]

B. STACK AND MODELING REQUIREMENTS

1. Stack Requirements⁷:

Except as provided in B.2., the following requirements apply to all stacks at the facility except those stacks serving emissions units listed in Attachment 2, and stacks serving exclusively as general building ventilation:

- a.** Stack vented emissions from a facility covered by this permit shall be exhausted from unobstructed discharge points that are within 10 degrees of vertical. [s. NR 407.105(2)(a)2, Wis. Adm. Code.]
- b.** Stacks at a facility covered by this permit shall be taller than any building that influences the dispersion of emissions from the stack. A building is considered to influence the dispersion of emissions from a stack if it is located within a circle around the building, the radius of which is 5 times the height of the building. [s. NR 407.105(2)(a)3, Wis. Adm. Code.]

2. Alternative to Stack Requirements:

In lieu of meeting the requirements of B.1.a. and b. above for all stacks at the facility, the owner or operator may instead demonstrate through air dispersion modeling that emissions from all of the facility's stacks, except those stacks serving emissions units listed in Attachment 2, and stacks serving exclusively as general building ventilation, do not and will not cause or exacerbate a violation of an air quality standard for the following air contaminants emitted by the facility: particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide and lead. [s. NR 407.105(2)(a)4, Wis. Adm. Code.]

3. Changes at the Facility:

If, after the date of coverage of the facility under this registration permit, the owner or operator adds any stacks, makes changes to any existing stacks which would result in an increase in the ambient impact of the stack's emissions, or adds or changes an emission unit so as to increase the maximum controlled emission rate of particulate matter from a stack or stacks; then the following requirements shall be met: [ss. 285.65(3), Stats., and 407.105(3)(c), Wis. Adm. Code]

- a.** For facilities that emit or will emit particulate matter as described in (1) and (2) below, whose existing, new or changed stacks meet the requirements of B.1.a. and b., the owner or operator shall demonstrate through an air dispersion modeling analysis that the facility's particulate matter emissions will not cause or exacerbate a violation of an air quality standard for particulate matter.

(1) Annual maximum controlled emissions of particulate matter from the entire facility (excluding particulate matter from emission units listed in Attachment 2 and stacks

⁷ The stack requirements in Section B of this permit cover emissions of particulate matter, SO₂, NO_x, CO, and lead. The stack and modeling requirements for hazardous air contaminants are contained in ch. NR 445, Wis. Adm. Code. All facilities covered by this permit must meet the applicable requirements of ch. NR 445, Wis. Adm. Code, in addition to the requirements of this section.

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serving as general building ventilation) are or will be equal to or greater than 5 tons per year.

- (2) The modeled ambient air impact of the emissions of particulate matter were equal to or greater than the threshold values listed on the map in Attachment 3 when the facility was modeled to determine its eligibility for this permit **or** when the facility was not modeled to determine its eligibility for this permit.

Note: The modeling thresholds may change in the future. The latest version of the modeling threshold map can be found at

(<http://dnr.wi.gov/org/aw/air/apii/regpermits.html>)

b. For facilities whose stacks do not or will no longer meet the stack requirements of B.1.a. and b., the owner or operator shall demonstrate through an air dispersion modeling analysis that the facility's emissions will not cause or exacerbate a violation of an air quality standard for the following pollutants emitted by the facility: particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide, and lead.

c. Facilities that do not and will not emit particulate matter as described in either B.3.a.(1) or (2) shall keep updated blue prints or technical drawings of modified stacks and maximum controlled emission rates of particulate matter from each stack.

Note: Stacks venting emission units listed in Attachment 2 and stacks only emitting general building ventilation do not need to be included in any required modeling analysis.

Table 2: Summary of Stack and Modeling Requirements

Do all stacks at the facility meet the Stack Requirements of B.1.a. and b.?		Are maximum controlled emissions of PM _{2.5} TPY?		Are modeled concentrations of PM _{2.5} thresholds on MAP? (See Attachment 3)		Is modeling required prior to making changes that would increase ambient impacts?	
YES	NO	YES	NO	YES	NO	YES	NO
X		X			X		X
X		X		X		PM only	
X			X	NA	NA		X
	X	NA	NA	NA	NA	X	

NA = Not Applicable

C. COMPLIANCE DEMONSTRATION REQUIREMENTS

All facilities need to meet the compliance demonstration requirement in C.1. and C.2.

1. Facility-wide Annual Actual Emission Calculations

By March 1st of each year, the owner or operator shall calculate the annual actual facility-wide emissions of particulate matter, volatile organic compounds, sulfur dioxide, nitrogen oxides, carbon monoxide, lead, each federally regulated hazardous air pollutant, and all federally regulated hazardous air pollutants combined, emitted by the facility in the previous calendar year. Emissions shall be calculated as follows:

- a.** All emissions from the facility shall be included in the calculation except emissions from emissions units listed in Attachment 2.
- b.** If the facility uses a control device to reduce emissions, the control efficiencies listed in Section F of this permit shall be used to calculate annual actual emissions. Only control devices listed in this permit or specifically required in an applicable air pollution requirement may be considered in calculating the facility-wide annual actual emissions. Where the control efficiencies listed in the permit and the specific control efficiencies required in an applicable requirement differ, the higher control efficiency may be used to calculate annual actual emissions.
- c.** Work practices and pollution prevention techniques that reduce emissions are not considered control devices for the purposes of this permit. These practices and techniques may be considered when calculating the annual actual facility-wide emissions as long as such reductions are quantifiable⁸.
- d.** Annual facility-wide emissions shall be calculated using the actual operating schedule, actual amounts of raw materials used or products produced, or actual amounts of fuels burned during the calendar year. [s. NR 406.17(1)(c), Wis. Adm. Code.]

2. Other Applicable Requirements

The owner or operator shall ensure that appropriate methods for demonstrating compliance are in place and followed for all other requirements applicable to this facility in ch. 285, Wis. Stats., and chs. NR 400 to NR 499, Wis. Adm. Code, and all applicable federal air pollution requirements in the Clean Air Act (42 USC 7401 to 7671q) and 40 CFR parts 50 to 97. [s. NR 406.17(1)(c), Wis. Adm. Code.]

Facilities that need to use a control device to meet any applicable emission limit must meet the following compliance demonstration requirements.

- 3.** If the owner or operator must use a control device to meet the annual actual facility-wide emissions limit in A.1., or any other applicable emission limitation in ch. 285, Wis. Stats., and chs. NR 400-499, Wis. Adm. Code, and any other applicable federal air pollution requirement in the Clean Air Act (42 USC 7401 to 7671q and 40 CFR parts 50 to 97), then the following requirements shall be met:

- a.** The control device shall be listed in Section F of this permit or otherwise specifically required by an applicable air pollution requirement.
- b.** The control device shall meet, at a minimum, the control efficiency listed in Section F for the device or the specific control efficiency required in the applicable air pollution requirement, whichever is higher.
- c.** The control device shall be used at all times the emission unit is operating except as allowed by the applicable emission limitation. [s. NR 406.17(1)(c), Wis. Adm. Code.]

⁸ Work practices that reduce emissions include techniques such as applying water to dust piles or road ways, the practice of keeping containers of organic compounds or used rags covered and other pollution prevention techniques

D. RECORDKEEPING AND MONITORING REQUIREMENTS

All facilities must keep the records in D.1. and D.2.

1. Records to Calculate Facility-wide Annual Actual Emissions:

The owner or operator shall maintain records sufficient to calculate annual actual facility-wide emissions for the previous calendar year as required in Condition C.1. [ss. NR 406.17(1)(c) and 439.04(1)(d), Wis. Adm. Code.]

2. Recordkeeping and Monitoring Requirements for all Other Applicable Requirements:

The owner or operator shall conduct monitoring and maintain records sufficient to demonstrate compliance with other applicable requirements in ch. 285, Wis. Stats., and chs. NR 400 to NR 499, Wis. Adm. Code, and applicable federal air pollution requirements in the Clean Air Act (42 USC 7401 to 7671q) and 40 CFR parts 50 to 97. [ss. NR 406.17(1)(c) and NR 439.04(1)(d), Wis. Adm. Code]

The records required in D.1 and D.2. may be kept in a variety of ways. The following requirements apply based on the *type* of records that are kept.

3. If Material or Product Throughput Records are Kept:

If the owner or operator uses the amount of material handled or throughput, or the amount of product produced, as a method to calculate emissions, the owner or operator shall, by March 1 of each year, record the quantity of material handled, throughput, or product produced (whichever is used to calculate emissions) for the process for the previous calendar year. [ss. NR 406.17(1)(c) and NR 439.04(1)(d), Wis. Adm. Code]

4. If Records of Fuel Usage are Kept:

If fuel is burned at the facility, the owner or operator shall, by March 1 of each year, record the amount of fuel purchased or used (whichever is used to calculate emissions) at the facility for the previous calendar year. [ss. NR 406.17(1)(c) and NR 439.04(1)(d), Wis. Adm. Code]

5. If Hours of Operation Records are Kept:

If the owner or operator utilizes the hours of operation of a source to calculate the emissions, the owner or operator shall, by March 1 of each year, calculate and record the hours operated for the source for the previous calendar year, rounded to the nearest hour. [ss. NR 406.17(1)(c) and NR 439.04(1)(d), Wis. Adm. Code]

Facilities that use materials containing organic compounds or hazardous air pollutants regulated by the Clean Air Act (as listed in Attachment 1 of this permit) must keep the records in D.6.

6. Volatile Organic Compound and s. 112(b) Clean Air Act Hazardous Air Pollutant (HAP) Records:

If materials containing VOCs or HAPs regulated under s. 112 (b) of the Clean Air Act are used at the facility, the owner or operator shall:

- a.** By March 1 of each year, calculate and record the amount of each material containing VOCs and s. 112(b) listed HAPs that were purchased or used at the facility during the previous calendar year. The owner or operator shall retain either purchase records or usage records depending on which is used as the basis for calculating emissions.
- b.** For each material containing VOCs or sec. 112(b) HAP used at the facility, maintain a material safety data sheet (MSDS), or other equivalent document, listing the amount of each VOC and sec. 112(b) HAP in the material. [s. NR 406.17(1)(c), Wis. Adm. Code.]

Note: This requirement does not apply to organic compounds or HAPs in substances used in the emission units listed in Attachment 2 of this permit. This requirement does not apply to air contaminants with emission rates described in s. NR 407.05(4)(c)10., Wis. Adm. Code.

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Length of time that records must be kept.		
<p>7. <u>Records Retention:</u> The owner or operator shall keep on site all records required by this permit for at least five years, unless a longer time period is required under any other condition of this permit or by statute or rule. [ss. NR 406.17(1)(c), NR 439.04(1)(d), and NR 439.04(2), Wis. Adm. Code]</p>		
The monitoring and recordkeeping requirements below apply to facilities that must use a control device in order to meet any limit in this permit.		
<p>8. <u>Air Pollution Control Device Monitoring and Maintenance:</u> If a source at the facility is equipped with an air pollution control device, the owner or operator shall:</p> <ul style="list-style-type: none"> a. Monitor the operation of the control device to ensure that it is operating properly. The parameters to be monitored and the frequency of monitoring are contained in D.12. of this permit. If a control device is not listed in D.12. of this permit, the owner or operator shall monitor the device as recommended by the control device manufacturer or based on good engineering practice. b. Perform maintenance on the control device as recommended by the control device manufacturer, or at a frequency based on good engineering practice as established by operational history, whichever is more frequent. [ss. 285.65(3), Wis. Stats and NR 406.17(1)(c) and NR 439.055, Wis. Adm. Code] 		
<p>9. <u>Accuracy of Air Pollution Control Device Monitoring Instrumentation:</u> When the Department requires instrumentation to monitor the operation of air pollution control equipment, or to monitor source performance, the instrument shall measure operational variables with the following accuracy:</p> <ul style="list-style-type: none"> a. The temperature monitoring device shall have an accuracy of 0.5% of the temperature being measured in degrees Fahrenheit or ± 5 °F of the temperature being measured, or the equivalent in degrees Celsius (centigrade), whichever is greater. b. The pressure drop monitoring device shall be accurate to within 5% of the pressure drop being measured or within ± 1 inch of water column, whichever is greater. c. The current, voltage, flow or pH monitoring device shall be accurate to within 5% of the specific variable being measured. [s. NR 439.055(3), Wis. Adm. Code] 		
<p>10. <u>Calibration of Air Pollution Control Device Monitoring Instrumentation:</u> All instruments used for measuring source or air pollution control equipment operational variables shall be calibrated yearly or at a frequency based on good engineering practice as established by operational history, whichever is more frequent. [s. NR 439.055(4), Wis. Adm. Code]</p>		
<p>11. <u>Air Pollution Control Device Operational Parameter Ranges:</u> The owner or operator shall maintain a list of the proper control device parameter ranges for each control device at the facility. These ranges shall be based on the control device manufacturer's recommendations or good engineering practice as established by operational history. [ss. NR 406.17(1)(c) and NR 439.04(1)(d), Wis. Adm. Code]</p>		
<p>12. <u>Air Pollution Control Device Monitoring Records:</u> For each control device used to meet any applicable emission limit, the owner or operator shall monitor and record the appropriate control device parameters at the specified frequency as listed below. If the facility operates a type of control device that is not listed below, then the owner or operator shall keep records of control device parameters which demonstrate the proper operation of the device. [ss. NR 406.17(1)(c) and NR 439.04(1)(d), Wis. Adm. Code]</p>		
If you operate this control device:	You must monitor this parameter:	You must record a reading this often:
Centrifugal Collector (cyclone)	Pressure drop	Once every 8 hours of operation or once per shift, whichever yields the greater number of measurements

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Multiple cyclone w/out flyash reinjection	Pressure drop	Once every 8 hours of operation or once per shift, whichever yields the greater number of measurements
Multiple cyclone with flyash reinjection	Pressure drop	Once every 8 hours of operation or once per shift, whichever yields the greater number of measurements
Wet cyclone separator	Pressure drop and water flow rate	Once every 8 hours of operation or once per shift, whichever yields the greater number of measurements
HEPA and other wall filters (including paint overspray filters)	Pressure drop OR Condition of filter including alignment, saturation and tears/holes	Once every 8 hours of operation or once per shift, whichever yields the greater number of measurements Once per day of operation
Fabric filters (e.g., baghouse, cartridge collectors)	Pressure drop	Once every 8 hours of operation or once per shift, whichever yields the greater number of measurements
Spray towers	Pressure drop and water flow rate	Once every 8 hours of operation or once per shift, whichever yields the greater number of measurements
Venturi scrubber	Pressure drop and scrubber liquor flow rate	Once every 8 hours of operation or once per shift, whichever yields the greater number of measurements
Condensation scrubber (packed bed)	Pressure drop and scrubber liquor flow rate	Once every 8 hours of operation or once per shift, whichever yields the greater number of measurements
Impingement plate scrubber	Pressure drop and scrubber liquor flow rate	Once every 8 hours of operation or once per shift, whichever yields the greater number of measurements
Electrostatic precipitators	Primary and secondary voltage, in volts; primary and secondary current, in amps; and sparking rate, in sparks per minute	Once every 8 hours of operation or once per shift, whichever yields the greater number of measurements
Thermal oxidizers	Temperature in the combustion chamber	Once every 15 minutes of operation
Catalytic oxidizers	Temperature in the inlet to the catalytic bed AND Catalyst bed reactivity	Once every 15 minutes of operation As per manufacturer specification
Condenser	Condenser outlet gas temperature	Once every 8 hours of operation or once per shift, whichever yields the greater number of measurements
Flaring or direct combustor	Temperature indicating presence of flame	Continuous hardcopy readout OR hardcopy readout of instances of no flame
Biofilter	Bed temperature, moisture content	Once per day of operation

E. REPORTING AND NOTIFICATION REQUIREMENTS

Reporting requirements for facilities that changed ownership during the past year.

1. Change of Ownership or Control:

The owner or operator shall notify DNR's Bureau of Air Management of a change of ownership or control of a facility covered by this permit within 30 calendar days after the change. The notification shall specify a date for the transfer of permit responsibility, coverage and liability. [s. NR 406.17(1)(c), Wis. Adm. Code]

Facilities that want to change operations in such a way that they'll no longer be eligible for this permit must notify the Department as follows *before* making these changes:

2. Changes Rendering Your Facility Ineligible for This Permit:

If the owner or operator plans to make a change at the facility that will result in the facility no longer being eligible for this permit:

- a. Before making the change, the owner or operator shall submit to the Department an application for a construction permit, unless the change is exempt under ch. NR 405, 406 and 408.
- b. Before making the change, the owner or operator shall request in writing that coverage under this registration permit be revoked upon issuance of any required air permit, and submit to the Department an application for a different type of permit if required.
- c. The owner or operator may not make the change until any required air pollution control construction and/or operation permit(s) are obtained.

[s. NR 406.17(6)(a) and (e), Wis. Adm. Code]

Additional Reporting Requirements for Portable Sources

3. Relocation Requirements:

- a. The owner or operator of a portable source covered by this registration permit shall provide written notice to the department at least 20 days prior to relocation. Relocation may occur if the Department does not object to the relocation.
- b. If a portable source relocates to a location with a different emission threshold in condition A.1. for any pollutant during any calendar year, the owner or operator shall calculate the amount of emissions that occurred at the previous location and the amount of emissions that occurred at the new location. The owner or operator shall compare those emission rates to the appropriate thresholds in condition A.1. of this permit. If the emission rate of any pollutant at the new location is greater than its emission limit, the owner or operation shall apply for a different type of construction permit within 30 days of identifying the exceedance.
- c. The portable source in its new location shall meet all applicable emission limitations and visibility requirements in the Department's rules and may not violate an air quality standard.

[s. 285.60(5), Wis. Stats.]

F. AIR POLLUTION CONTROL DEVICE REQUIREMENTS

Table 2. Air Pollution Control Device Efficiencies

Control Device	Control Efficiency (Total Enclosure) ⁹			Control Efficiency (Hood)		
	PM	PM ₁₀ and PHAP	VOC and VHAP	PM	PM ₁₀ and PHAP	VOC and VHAP
Low efficiency cyclone ¹⁰	40%	20%	-	32%	16%	-
Medium efficiency cyclone ¹⁹	60%	40%	-	48%	32%	-
High efficiency cyclone ¹⁹	80%	60%	-	64%	48%	-
Multiple cyclone w/out flyash reinjection	80%	60%	-	64%	48%	-
Multiple cyclone with fly ash reinjection	50%	38%	-	40%	30%	-
Wet cyclone separator	50%	38%	-	40%	30%	-
HEPA and other wall filters (including paint overspray filters)	95%	95%	-	76%	76%	-
Fabric filters (e.g., baghouse, cartridge collectors)	98%	92%	-	78%	73%	-
Spray towers	80%	80%	70%	64%	64%	56%
Venturi scrubber	90%	85%	-	72%	68%	-
Condensation scrubber (packed bed)	90%	90%	-	72%	72%	-
Impingement plate scrubber	75%	75%	-	60%	60%	-
Electrostatic precipitators	95%	95%	-	76%	76%	-
Thermal oxidizers	-	-	95%	-	-	76%
Catalytic oxidizers	-	-	95%	-	-	76%
Condenser	-	-	70%	-	-	56%
Flaring or direct combustor	-	-	98%	-	-	78%
Biofilter	-	-	80%	-	-	64%

Table 3. Cyclone Efficiency Table

(see Diagram 1. on next page for cyclone dimension nomenclature)

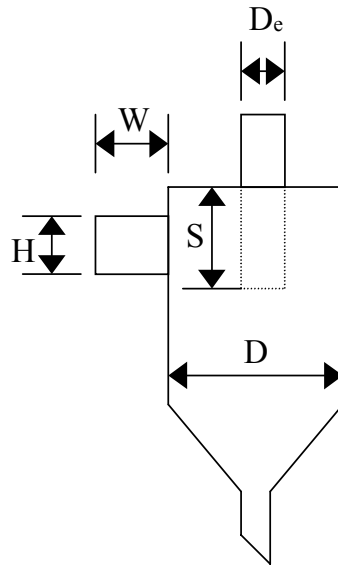
Ratio Dimensions	High Efficiency	Medium Efficiency	Low Efficiency
Height of inlet, H/D	≤0.44	>0.44 and <0.8	≥0.8
Width of inlet, W/D	≤0.2	>0.2 and <0.375	≥0.375
Diameter of gas exit, D _e /D	≤0.4	>0.4 and <0.75	≥0.75
Length of vortex finder, S/D	≤0.5	>0.5 and <0.875	≥0.875

If one or more of the "ratio dimensions," as listed in Table 3, are in a different efficiency category (high, medium, low), then the lowest efficiency category shall be applied.

⁹ VHAP = Volatile hazardous air pollutant, PHAP = Particulate hazardous air pollutant.

¹⁰ See Table 3, below, to identify level of efficiency for cyclones.

Diagram 1. Cyclone Dimension Nomenclature



G. ALLOWABLE NEW SOURCE PERFORMANCE STANDARDS and MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY STANDARDS

- 1.** Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (s. NR 440.207, Wis. Adm. Code).
- 2.** Standards of Performance for Hot Mix Asphalt Facilities (s. NR 440.25, Wis. Adm. Code).
- 3.** Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction or Modification Commenced After June 11, 1973 and Prior to May 19, 1978 (s. NR 440.27, Wis. Adm. Code).
- 4.** Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction or Modification Commenced After May 18, 1978 and Prior to July 23, 1984 (s. NR 440.28, Wis. Adm. Code).
- 5.** Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Storage Vessels) for Which Construction, Reconstruction or Modification Commenced After July 23, 1984 (s. NR 440.285, Wis. Adm. Code).
- 6.** Standards of Performance for Grain Elevators (s. NR 440.47, Wis. Adm. Code).
- 7.** Standards of Performance for Surface Coating of Metal Furniture (s. NR 440.48, Wis. Adm. Code).
- 8.** Standards of Performance for Industrial Surface Coating: Large Appliances (s. NR 440.57, Wis. Adm. Code).
- 9.** Standards of Performance for Petroleum Dry Cleaners (s. NR 440.68, Wis. Adm. Code).
- 10.** Standards of Performance for Industrial Surface Coating of Plastic Parts for Business Machines (s. NR 440.72, Wis. Adm. Code).
- 11.** Any New Source Performance Standard or Maximum Achievable Control Technology (MACT) Standard, where the facility or process is only subject to recordkeeping or notification requirements of that standard. [s. 285.65(3), Wis. Stats.]

ATTACHMENT 1

AIR POLLUTANTS OF SEC. 112(b), CLEAN AIR ACT

CAS Chemical Number Name

75070 Acetaldehyde
60355 Acetamide
75058 Acetonitrile
98862 Acetophenone
53963 2-Acetylaminofluorene
107028 Acrolein
79061 Acrylamide
79107 Acrylic acid
107131 Acrylonitrile
107051 Allyl chloride
92671 4-Aminobiphenyl
62533 Aniline
90040 o-Anisidine
1332214 Asbestos
71432 Benzene (including benzene from gasoline)
92875 Benzidine
98077 Benzotrithloride
100447 Benzyl chloride
92524 Biphenyl
117817 Bis(2-ethylhexyl)phthalate (DEHP)
542881 Bis(chloromethyl)ether
75252 Bromoform
106990 1,3-Butadiene
156627 Calcium cyanamide
105602 Caprolactam
133062 Captan
63252 Carbaryl
75150 Carbon disulfide
56235 Carbon tetrachloride
463581 Carbonyl sulfide
120809 Catechol
133904 Chloramben
57749 Chlordane
7782505 Chlorine
79118 Chloroacetic acid
532274 2-Chloroacetophenone
108907 Chlorobenzene
510156 Chlorobenzilate
67663 Chloroform
107302 Chloromethyl methyl ether
126998 Chloroprene
1319773 Cresols/Cresylic acid (isomers and mixture)

CAS Chemical Number Name

95487 o-Cresol
108394 m-Cresol
106445 p-Cresol
98828 Cumene
94757 2,4-D, salts and esters
3547044 DDE
334883 Diazomethane
132649 Dibenzofurans
96128 1,2-Dibromo-3-chloropropane
84742 Dibutylphthalate
106467 1,4-Dichlorobenzene(p)
91941 3,3'-Dichlorobenzidine
111444 Dichloroethyl ether (Bis(2-chloroethyl)ether)
542756 1,3-Dichloropropene
62737 Dichlorvos
111422 Diethanolamine
121697 N,N-Diethyl aniline (N,N-Dimethylaniline)
64675 Diethyl sulfate
119904 3,3'-Dimethoxybenzidine
60117 Dimethyl aminoazobenzene
119937 3,3'-Dimethyl benzidine
79447 Dimethyl carbamoyl chloride
68122 Dimethyl formamide
57147 1,1-Dimethyl hydrazine
131113 Dimethyl phthalate
77781 Dimethyl sulfate
534521 4,6-Dinitro-o-cresol, and salts
51285 2,4-Dinitrophenol
121142 2,4-Dinitrotoluene
123911 1,4-Dioxane (1,4-Diethyleneoxide)
122667 1,2-Diphenylhydrazine
106898 Epichlorohydrin
(1-Chloro-2,3-epoxypropane)
106887 1,2-Epoxybutane
140885 Ethyl acrylate
100414 Ethyl benzene
51796 Ethyl carbamate (Urethane)
75003 Ethyl chloride (Chloroethane)
106934 Ethylene dibromide (Dibromoethane)
107062 Ethylene dichloride (1,2-Dichloroethane)

**CAS Chemical
Number Name**

107211 Ethylene glycol
151564 Ethylene imine (Aziridine)
75218 Ethylene oxide
96457 Ethylene thiourea
75343 Ethylidene dichloride (1,1-Dichloroethane)
50000 Formaldehyde
76448 Heptachlor
118741 Hexachlorobenzene
87683 Hexachlorobutadiene
77474 Hexachlorocyclopentadiene
67721 Hexachloroethane
822060 Hexamethylene-1,6-diisocyanate
680319 Hexamethylphosphoramide
110543 Hexane
302012 Hydrazine
7647010 Hydrochloric acid
7664393 Hydrogen fluoride (Hydrofluoric acid)
7783064 Hydrogen sulfide
123319 Hydroquinone
78591 Isophorone
58899 Lindane (all isomers)
108316 Maleic anhydride
67561 Methanol
72435 Methoxychlor
74839 Methyl bromide (Bromomethane)
74873 Methyl chloride (Chloromethane)
71556 Methyl chloroform (1,1,1-Trichloroethane)
60344 Methyl hydrazine
74884 Methyl iodide (Iodomethane)
108101 Methyl isobutyl ketone (Hexone)
624839 Methyl isocyanate
80626 Methyl methacrylate
1634044 Methyl tert butyl ether
101144 4,4'-Methylene bis(2-chloroaniline)
75092 Methylene chloride (Dichloromethane)
101688 Methylene diphenyl diisocyanate (MDI)
101779 4,4'-Methylenedianiline
91203 Naphthalene
98953 Nitrobenzene
92933 4-Nitrobiphenyl
100027 4-Nitrophenol
79469 2-Nitropropane
684935 N-Nitroso-N-methylurea
62759 N-Nitrosodimethylamine
59892 N-Nitrosomorpholine

**CAS Chemical
Number Name**

56382 Parathion
82688 Pentachloronitrobenzene (Quintobenzene)
87865 Pentachlorophenol
108952 Phenol
106503 p-Phenylenediamine
75445 Phosgene
7803512 Phosphine
7723140 Phosphorus
85449 Phthalic anhydride
1336363 Polychlorinated biphenyls (Aroclors)
1120714 1,3-Propane sultone
57578 beta-Propiolactone
123386 Propionaldehyde
114261 Propoxur (Baygon)
78875 Propylene dichloride (1,2-Dichloropropane)
75569 Propylene oxide
75558 1,2-Propylenimine (2-Methyl aziridine)
91225 Quinoline
106514 Quinone
100425 Styrene
96093 Styrene oxide
1746016 2,3,7,8-Tetrachlorodibenzo-p-dioxin
79345 1,1,2,2-Tetrachloroethane
127184 Tetrachloroethylene (Perchloroethylene)
7550450 Titanium tetrachloride
108883 Toluene
95807 2,4-Toluene diamine
584849 2,4-Toluene diisocyanate
95534 o-Toluidine
8001352 Toxaphene (chlorinated camphene)
1208211,2,4-Trichlorobenzene
79005 1,1,2-Trichloroethane
79016 Trichloroethylene
95954 2,4,5-Trichlorophenol
88062 2,4,6-Trichlorophenol
121448 Triethylamine
1582098 Trifluralin
540841 2,2,4-Trimethylpentane
108054 Vinyl acetate
593602 Vinyl bromide
75014 Vinyl chloride
75354 Vinylidene chloride (1,1-Dichloroethylene)

CAS Chemical

Number Name

1330207 Xylenes (isomers and mixture)

95476 o-Xylenes

108383 m-Xylenes

106423 p-Xylenes

0 Antimony Compounds

0 Arsenic Compounds (inorganic including arsine)

0 Beryllium Compounds

0 Cadmium Compounds

0 Chromium Compounds

0 Cobalt Compounds

0 Coke Oven Emissions

0 Cyanide Compounds¹

0 Glycol ethers²

0 Lead Compounds

0 Manganese Compounds

0 Mercury Compounds

0 Fine mineral fibers³

0 Nickel Compounds

0 Polycyclic Organic Matter⁴

0 Radionuclides (including radon)⁵

0 Selenium Compounds

NOTE: For all listings above that contain the word "compounds" and for glycol ethers, the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., antimony, arsenic, etc.) as part of that chemical's infrastructure.

¹ X'CN where X = H' or any other group where a formal dissociation may occur. For example KCN or Ca(CN)₂

² Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol R-(OCH₂CH₂)_n -OR' where

n = 1, 2, or 3

R = alkyl or aryl groups

R' = R, H, or groups which, when removed, yield glycol ethers with the structure: R-(OCH₂CH₂)_n-OH. Polymers are excluded from the glycol category.

³ Includes mineral fiber emissions from facilities manufacturing or processing glass, rock, or slag fibers (or other mineral derived fibers) of average diameter 1 micrometer or less.

⁴ Includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100 ½ C.

⁵ A type of atom which spontaneously undergoes radioactive decay.

ATTACHMENT 2
EMISSION UNITS NOT SUBJECT TO CERTAIN
REGISTRATION CONSTRUCTION PERMIT REQUIREMENTS

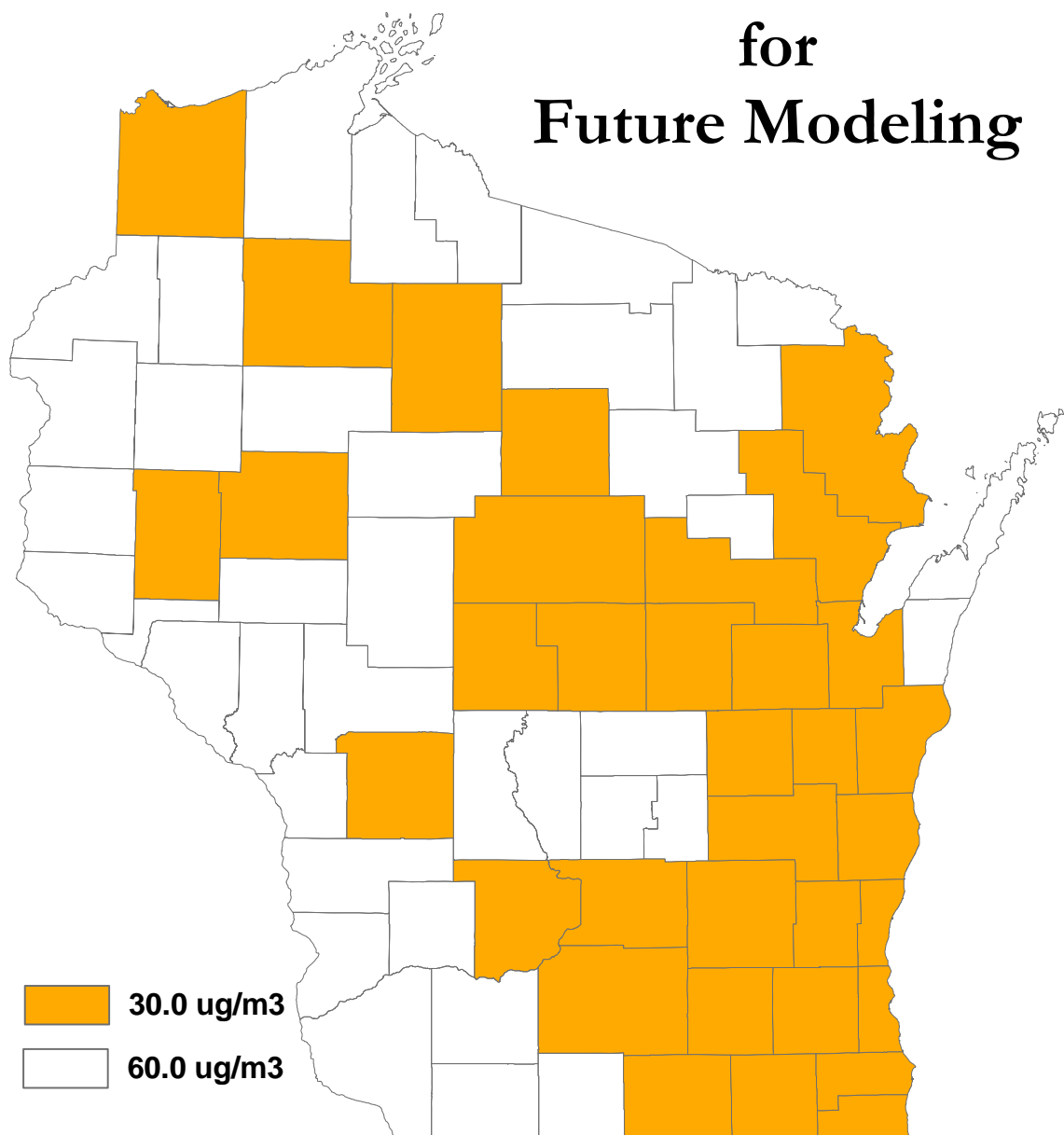
1. Convenience space heating units with heat input capacity of less than 5 million Btu per hour that burn gaseous fuels, liquid fuels or wood
2. Convenience water heating
3. Maintenance of grounds, equipment and buildings, including lawn care, pest control, grinding, cutting, welding, painting, woodworking, general repairs and cleaning, but not including use of organic compounds as clean-up solvents
4. Boiler, turbine, generator, heating and air conditioning maintenance
5. Pollution control equipment maintenance
6. Internal combustion engines used for warehousing and material transport, forklifts and courier vehicles, front end loaders, graders and trucks, carts and maintenance trucks
7. Fire control equipment
8. Janitorial activities
9. Office activities
10. Fuel oil storage tanks with a capacity of 10,000 gallons or less
11. Stockpiled contaminated soils
12. Demineralization and oxygen scavenging of water for boilers
13. Purging of natural gas lines
14. Any emission unit, operation, or activity that has, for each air contaminant, maximum controlled emissions that are less than the level specified in Table 3 of ch. NR 407, Wis. Adm. Code. Multiple emissions units, operations, or activities that perform identical or similar functions shall be combined for the purposes of this determination.
15. If the maximum controlled emissions of any air contaminants listed in Table 3 of ch. NR 407, Wis. Adm. Code, from all emission units, operations or activities at a facility are less than 5 times the level specified in Table 3, for those air contaminants, any emission unit operation or activity that emits only those air contaminants.

ATTACHMENT 3

Particulate Matter Modeling Threshold Concentrations by County

This map is current up to the date specified below and may be updated periodically. For the most current thresholds, see <http://dnr.wi.gov/org/aw/air/apii/regpermits.html>.

ROP Threshold for Future Modeling



Updated
04/01/2006

